What is claimed is:

1. A method for transferring data from at least one local data storage device to at least one remote data storage device, comprising:

    subdividing the data into portions;

5   assigning a sequence number to each of the portions, wherein writes to the at least one local storage device for a first set of portions having a first sequence number are begun before writes for a second set of portions having a second sequence number that is assigned after to the first sequence number; and

    updating the sequence number in response to a particular sequence number having

10   been used before and there being data to send from the at least one local storage device to the at least one remote storage device.

2. A method, according to claim 1, wherein the at least one local storage device includes a plurality of storage entities that form a consistency group.

3. A method, according to claim 2, further comprising:

15   passing a shuttle between the entities of the consistency group; and

    using the shuttle to determine if a particular sequence number has been used before.

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4. A method, according to claim 3, wherein updating the sequence number includes a particular one of the entities of the consistency group using the shuttle to determine if the particular one of the entities has used the particular sequence number before and, if so, the particular one of the entities updating the sequence number in response to the

5   particular one of the entities having data to be sent to the at least one remote storage device.

5. A method, according to claim 1, further comprising:

    maintaining a running total of an amount of data associated with each of the sequence numbers.

10   6. A method, according to claim 5, wherein the at least one local storage device includes a plurality of storage entities that form a consistency group.

7. A method, according to claim 6, further comprising:

    passing a shuttle between the entities of the consistency group; and

    using the shuttle for maintaining the running total of data associated with each of

15   the sequence numbers.

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8. A method, according to claim 7, wherein updating the sequence number includes a particular one of the entities of the consistency group using the shuttle to determine if the particular one of the entities has used the particular sequence number before and, if so, the particular one of the entities updating the sequence number in response to the

5   particular one of the entities having data to be sent to the at least one remote storage device.

9. A method, according to claim 8, further comprising:

following updating the sequence number, transferring data having a previous sequence number from the at least one local storage device to the at least one remote

10   storage device.

10. A method, according to claim 9, further comprising:

prior to transferring data, buffering the data in an auxiliary storage area associated with the at least one local storage device.

11. A computer program product that transfers data from at least one local data storage device to at least one remote data storage device, comprising:

executable code that maintains the data subdivided into portions;

executable code that assigns a sequence number to each of the portions, wherein

5   writes to the at least one local storage device for a first set of portions having a first sequence number are begun before writes for a second set of portions having a second sequence number that is assigned after to the first sequence number; and

executable code that updates the sequence number in response to a particular sequence number having been used before and there being data to send from the at least

10   one local storage device to the at least one remote storage device.

12. A computer program product, according to claim 11, wherein the at least one local storage device includes a plurality of storage entities that form a consistency group.

13. A computer program product, according to claim 12, further comprising:

executable code that passes a shuttle between the entities of the consistency

15   group; and

executable code that uses the shuttle to determine if a particular sequence number has been used before.

14. A computer program product, according to claim 13, wherein executable code that updates the sequence number includes executable code that causes a particular one of the entities of the consistency group using the shuttle to determine if the particular one of the entities has used the particular sequence number before and, if so, causes the particular one of the entities to update the sequence number in response to the particular one of the entities having data to be sent to the at least one remote storage device.

15. A computer program product, according to claim 11, further comprising:

executable code that maintains a running total of an amount of data associated with each of the sequence numbers.

16. A computer program product, according to claim 15, wherein the at least one local storage device includes a plurality of storage entities that form a consistency group.

17. A computer program product, according to claim 16, further comprising:

executable code that passes a shuttle between the entities of the consistency group; and

executable code that uses the shuttle for maintaining the running total of data associated with each of the sequence numbers.

18. A computer program product, according to claim 17, wherein executable code that updates the sequence number includes executable code that causes a particular one of the entities of the consistency group using the shuttle to determine if the particular one of the entities has used the particular sequence number before and, if so, causes the particular

5   one of the entities updating the sequence number in response to the particular one of the entities having data to be sent to the at least one remote storage device.

19. A computer program product, according to claim 18, further comprising:

executable code that transfers data having a previous sequence number from the at least one local storage device to the at least one remote storage device following updating

10   the sequence number.

20. A computer program product, according to claim 19, further comprising:

executable code that buffers the data in an auxiliary storage area associated with the at least one local storage device prior to transferring data.